2; Jochelson E-5 (1884-1902) 1933 Yakut

intensity of the cold, with temperatures which may drop to −65 degrees. Precipitation generally occurs in the first half of winter. The greatest depth of snowfall averages from 30 to 40 cm., and occasionally may be 70 to 80 cm. 132

Spring is short, begins late (in the middle of April), and may be characterised by sharp variations in temperature. The precipitation during April and May is greater than in the winter months, but is, nevertheless, negligible.

The most characteristic features of the Yakut summer are: continuous sunshine (up to twenty hours daily); very few clouds; a high degree of sultriness in the middle of the day (up to 39 degrees in the shade) and a considerable fall in temperature during the short night; the period without frost lasts from 115 to 120 days; considerable dryness of the air and slight rainfall, about 30 to 40 mm. per month.

Autumn, like the spring, is very short, lasting but two months (September and October); the range in the variation of temperature is very large and the curve of average diurnal temperature falls sharply in October; precipitation is greatly reduced, as compared with that in summer.

The mean annual temperature varies at different points from −6.8 degrees to −10.7 degrees; the mean temperature of January from −35.5. to −44.8 degrees, of July from 18.3 degrees to 19.4 degrees, that of the three summer months being 16.5 degrees.

The mean annual precipitation for a number of years for various localities ranges from 187 to 271 mm. During the five warm months (May to September) the rainfall is from 130 to 192 mm.

Comparative data show that with respect to the quantity and distribution of precipitation, as well as the temperature of the summer months, the Lena-Viliui plain differs but little from the steppe regions of central Siberia (Chita, Irkutsk, Minusinsk and others) situated much further south. This peculiarity of the climate of the central Yakut country should be particularly borne in mind, as an exaggerated importance has generally been attributed to the severe winter frost. Beyond its purely practical importance for the needs of agriculture, this climatic peculiarity affords a clue to the comprehension of many phenomena in the flora and soil of the country which do not otherwise seem in accord with the usual conception of a territory lying between 62 and 64 degrees north latitude. The duration of t e period of warm weather and of the intensity of the summer heat in the region of the Lena-Viliui plain is sufficient to ensure not only the development of a very diversified natural vegetation, but also to render possible the successful growth of cultivated plants having a fairly long period of vegetation. 134 137 132 [241]

2: Jochelson E-5 (1884-1902) 1933 Yakut (RV2)
SIBIRIAK (RR4)

S 795 797

ing a poor Yakut for money, but this incident did not come to the knowledge of the Russian administration.

S 795 231

Being vegetarians, the skoptzy kept horses for driving and farming and horned cattle for their milk and milk products. They kept birds for their eggs.

S 795 175 167 241

In 1904 the *skoptzy*, according to a manifesto from the Czar, were allowed to return to European Russia and, beginning in 1905, they started to leave Yakut Province, by villages. On their westward journey they told everywhere of their success in carrying on agriculture in Yakutsk Province. Many Russian peasants set out for Yakut Province to occupy the land of the *skoptzy*, but without their resources were unable to carry on their agricultural pursuits on the same scale.

Y 241 ● 175 177

Yakut Agriculturists. The Yakut learned the technique of soil cultivation from the Russians from whom they also received seed. Their first sowing was in 1853 in the valley of the Maya River, thus it is only about seventy-five years since the native population became agriculturists. From that time, agriculture developed rapidly. In the first half of the eighteenth century about 400 to 450 acres were sown in Yakut Province; in 1891 over 16,000 acres, and in 1917, about 34,000 acres. It is interesting to note that three-fifths of the tilled land was cultivated by the Yakut.

Y 243

The proportion of cereal plants sown was and remains almost constant. In the period between 1917 and 1925 barley occupied first place (from 46 to 59 per cent of the cultivated land), then followed spring and winter rye (from 30 to 39 per cent), spring wheat (from 6 to 13.6 per cent) and oats (from 1 to 5 per cent).

Y 244

In addition to cereal plants, potatoes should be mentioned. In 1900–1910 these were grown on 700 acres. No other vegetables are cultivated by the Yakut. But Russians living in the suburbs of the cities grow many kinds of sweet herbs, onions, melons, watermelons, etc. The harsh winter of Yakutsk Province has its compensation in the warm summer, the abundant sunshine of its long clear days and the continentality of climate in general. Because of these climatic conditions, the possible period of plant growth is much shorter in Yakutsk Province (central and southern parts) than in countries lying much farther to the south. Thus the average maturation period for barley is seventy-one days, wheat, seventy-seven days, and spring rye, eighty days.

Y 241 912 407 177

Agricultural methods are still primitive. Some Yakut continue to use the iron spade for tilling. Few possess iron plows; harrows with iron instead of wooden teeth are a great luxury.

Fig. 77*a* shows a Yakut man and woman transporting a Yakut plow on an ox-drawn sledge. The method of plowing may be seen in Fig. 77*b*. A model of an ox sledge is illustrated in Fig. 78. Even in summer it is much easier to transport freight on sledges where there are no roads.

Transportation

Outside the City of Yakutsk, the use of the wheeled cart, adopted from the Russians, is very limited throughout the Province. Roads suitable for wheeled transport are rare. They extend only 1036 kilometers: from Yakutsk to Viliuisk (600 km.) and from Viliuisk to Suntar (436 km.). I myself had the opportunity to use a wheeled cart when traveling from Yakutsk about sixty miles to the east to the Churupcha settlement.

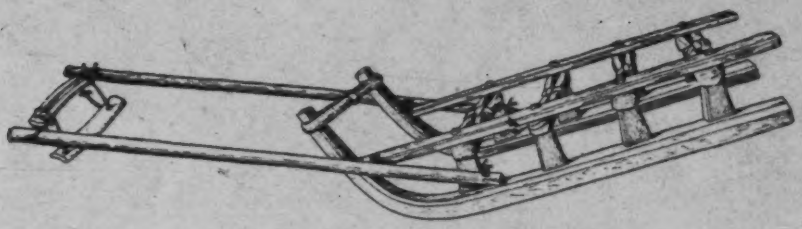

Fig. 78 (70-8832). Model of an Ox Sledge.

All the other roads are swampy and in summer were passable only on horseback; even this means of transportation is very difficult, particularly in the northern districts. In winter sledges are everywhere drawn by horses; in the northern districts reindeer and dogs are also used. Many Tungus, Lamut, and Yukaghir use the reindeer for riding, particularly in the mountainous districts between the great rivers. In summer small steamers ply the Lena and Viliui rivers. On the Yana, Indighirka, and Kolyma rivers and their tributaries large boats are used for carrying freight as well as for passengers. During the winter freight carried on pack-horses or by reindeer sledges from the shores of the Okhotsk Sea (Okhotsk, Yamsk, Ayan or Ola) over the mountains to the upper course of the Kolyma River, is floated down on pontoon-like rafts consisting of two large boats covered with a bridge. Such rafts are provided with a rudder and are propelled with long poles. As they cannot be poled up the river they are sold to the inhabitants of Nishne Kolymsk, who make boats of different sizes from them. Recently I learned that a steamer coming through Bering Strait now visits Nishne Kolymsk every summer, bringing flour and other commodities for sale or exchange for furs.

11: Lansdell--304 M-3 (1879) 1882 Yakut
116, 231, 241, 492

"The Yakutes who inhabit the inclement region adjacent to the Frozen Ocean have neither horses nor oxen, but breed large numbers of dogs, which draw them to and fro on their fishing excursions. Even those living on the 62nd parallel keep cattle under far greater difficulties than usual, for they have to make long journeys to collect hay, and do not always find enough. The cold prevents their breeding sheep, goats, or poultry. Nevertheless, cattle and hunting are their chief means of subsistence, for they do not in general cultivate the land, though in the gardens at Yakutsk are grown potatoes, cabbages, radishes, and turnips; gherkins, too, are reared in hot-beds."

19: Kharuzin -- 59 -61 E-4 (no date) 1898 Yakut-1-2
116, 241, 423

The wealth of land, the vast extent of land holdings, and the semi-nomadic [60] character of the life of the Yakuts explains the wide application among them of the rights to occupy and freely utilize land. There is still much land "belonging to no one;" occupation of such land is permitted, and the setting up of stakes is considered sufficient proof that a given portion of land or fishing site has been occupied by some person. But the bringing of the occupied land into a cultivation state with his own labor and means makes the occupant its master. (1) The same right is acquired by the person who builds

1. Cf. Prince Kostrov. Ocherk i͡uridicheskoe byta I͡Autov [Juridical Customs of the Yakut]. Vsesoi͡uznoe Geograficheskoe Obshchestvo, Vostochno-Sibirskiĭ Otdel, Zapiski, Otdi͡elenie Etnografii, VIII, pp. 285 ff.; also Vrut͡sevich, XVII, No. 2, pp. 14-15.

a home on an occupied piece of land. Therefore he who sows on someone else's land must pay the owner an amount equal to the rent on the sown portion of land; likewise, if anyone should construct a house on land occupied by someone else, he is obliged either to tear it down or pay rent. However the owner does not have the right to forbid anyone to use the roads running through his field; the latter is shut off, and the passerby has the obligation of shutting the gates of the enclosure after going through. Vacant sites are occupied by the Yakuts principally for agriculture or for making hay, or finally for

fishing purposes. The right of ownership of these sections, based on occupation and labor is guaranteed by the community. But this right does not extend to the water and the wooded sections: they remain for the use of all the members of the community, and the owner does not have the right to forbid anyone to take water from the lakes and rivers on his section of land, to gather berries, cut down trees or hunt for wild animals and birds.

The owner of a section of land can turn to his profit any increment arising from the deposit of sand or silt on the bank of the river occupied by him, but only up to the middle of the river; therefore the islands, for example, lying between the occupied bank and the middle of the river, eo-ipso form part of the occupied section.

The ploughed land, cleared and cultivated through the efforts of the family occupying the section, as well as the land that goes with the farmstead, customarily is not divided. This is explained by [61] the general investment of labor (of the whole family) in its development, as well as the fact that agriculture up to our time has not played a principal role in the economic life of the Yakut community, which, under the conditions of the dominance of the cattle raising economy, willingly permits its individual members to occupy vacant lands and own them without any obstacles.

37: Dobell--345 G-2 (1812-13) 1830 Yakut
116, 241, 412, 493

"During our morning's ride I stopped to see the Yakuts mow grass, which they performed as a man might cut wood in other countries, swinging a short dull scythe above their heads, and literally hewing it down by main strength. Mowing is, properly, a work done by sleight, as well as by strength, with a long sharp scythe, that enables an expert hand to lay down a couple of acres of grass in a day: and this should be explained to them. I observed their hay was drawn home by oxen, yoked to sledges, nearly after the European manner. Their horned cattle, in general, though not remarkably tall, are large, strong, and well proportioned; but the cows do not give a great deal of milk. The cattle here were larger and better than immediately in the neighbourhood of Yakutsk."

38: Dobell--22-23 G-2 (1812-13) 1830 Yakut
116, 241

"Even the Yakuts along the Lena, and on the numerous large islands which divide that fine stream, have taken seriously to agriculture; so that, in spite of the little encouragement received from the local Government, the natives having now found [23] their account in the labours of the field, there is every reason to conclude these will spread over the province."

39: Jochelson E-5 (1888-97) 1906 Yakut

dress and dress-ornamentation of the Tartaric peoples, the dualistic religious ideas, and the poetical folk-lore, of Western Asia.

In their old country they were principally horse-breeders. The horses were employed both as beasts of burden and as animals for riding; their skins were used for clothing; their flesh, for food; and kumiss, the fermented drink prepared from mare's milk, served not only as a stimulating beverage, but also as a most important nutritious food.[1] For a time after their arrival in their new abode, the horse was still their principal domestic animal, and kumiss their essential food; but gradually the climatic conditions of the country on the one hand, and contact with Russian culture on the other, have exerted a modifying influence, which is still operative, over both the mental and the material culture of the Yakut. A small part of the tribe in the extreme north of the Yakut province must have experienced a decadence of their former material life. This minority became reindeer-breeders, dog-breeders, or hunters, and fish-eaters. But even into these new lines of life the Yakut introduced more advanced methods.

The tribe as a whole, while engaged in horse and cattle breeding as their chief occupation, began to increase the number of their horned cattle at the expense of their number of horses. Of cow's milk they could make, for use during the long winter, butter, a kind of cheese, and some other milk products which cannot, as we shall see later, be made from mare's milk. The Russian gold-mining companies on the rivers Olekma and Vitim proved profitable buyers of these cattle, and this gave an impetus to the raising of them. Finally, the cultivation of cereal plants, borrowed from the Russians in the southern parts of the Yakut Province, where the climate allows of it, has made such progress in the last twenty years, that at present agriculture is the chief occupation, and bread the staple food, of many Yakut families of the District of Yakutsk, and particularly of that of Olekminsk. Nowadays large droves of horses, and

[1] Some travellers consider that the Yakut horse belongs to the present race of horses of the steppes of southwestern Siberia; but it is difficult to say whether the Yakut horse of to-day has any connection with the extinct horse, the fossil remains of which have been found in the polar regions of northeastern Siberia.

43: Karutz--74 [6] E-2 (no date) 1925 Yakut
116, 171, 241, 262

The Yakuts are not only cattle-breeders, but also occupy themselves a little with agriculture.

They live primarily on grain, which is replaced by a meal of grits made of ground larch bark among the poor;they live also on meat, butter, cream, sour mare milk (kumys) (the old product of Turkish nomad civilization), and finally on the usual herbs and berries found in Siberia.

T /24 cont./
432 possible for a single trader to usurp such power and to fleece a
441 large area in this manner rests on the incredible laziness of
[438] the local population, which shrinks from the trouble of taking its products to the Lena, where it would find far more favorable conditions both for the sale of these and for the purchase of other
T goods.
438 The authorities have already turned their attention to the conditions described, and the isprawnik /ispravnik/ of Kirensk, who had been in Preobrashénskoje shortly before we were on account of the crop failure that took place here the previous year, the consequences of which, incidentally, were scarcely noticeable because of the grain quickly brought in, had even warned the peasants about the merchant in question in a circular
T order and had urged them /25/ to go directly to the Lena to trade.
[461] Whether this measure will bear any fruit is still uncertain, to
T be sure, for the indolence of the peasants can be overcome only
466 through direct coercive measures. In this connection there is the characteristic example of Potschekúnin, who toward the end of the forties was isprawnik of Kirensk and at that time most feared and hated, but now is in the best odor here. That is, for the encouragement of agriculture he ordered that every peasant annually had to make arable a quarter-dessiatine (1)

1. One dessiatine = 2400 sq. sagenes. One sagene = 7 Russian feet = 3 arshins.

T
433 and had the lazy ones beaten unmercifully. The Tunguska owes
T it to him that the local peasants now produce enough grain for
Y
● 241 their own use in favorable years. In Podwolótschnaja practically all field crops are cultivated; in Jerbochotschón, as has been mentioned, the last settlement at present, only barley and oats and various vegetables, such as carrots, turnips, potatoes, radishes, onions, and cabbage, which, however, does not set heads. With careful treatment the latter might perhaps also be achieved; at least the wife of the previously mentioned merchant in Preobrashénskoje, located, to be sure, one and a quarter degrees of latitude farther south, not only raised beautiful

T
Y /25 cont./

241 heads of cabbage, but even cucumbers, melons, and watermelons, in hotbeds, of course -- and no wonder, when even the far colder Jakutsk /Yakutsk/ could contribute to the agricultural exhibition in Irkutsk in the year 1868 a watermelon weighing 30 pounds.

T
631 Finally in administrative respects, too, Preobrashénskoje is the principal community of the Tunguska, in that here a division of the Petropáwlowskschen Wólost /Petropavlovsk volost/ and, five versts away, the administrative board of the Kureíki and /26/ Kondógir Tungus are found, the latter of which was transferred here from Kirensk only a few years ago.

T
122 After a short stay in Preobrashénskoje I traveled to the village of Móga, located barely ten versts downstream, where Czekanowsky had discovered a suitable dwelling for us, in which I, busy with meteorological and astronomical observations and the calculation of those made earlier, remained until January 23. In the meantime Czekanowsky came back from Jerbochotschón, where he had found a number of Tungus and had arranged with them the furnishing of the reindeer and narten

T /Russ. narta, "sled"/ required for our further travels to the
[115] sources of the Olenek. We had already greeted our old acquaintance, the schúlinga (Tungus elder) Petrowán Golé Káplin, who had been very helpful to us the year before because of his knowledge of places and his great influence on his countrymen. This year he was prepared, after he was relieved, at his request,

T of the office of schúlinga, to accompany us on the whole trip.

493 The Tungus at first did not want to know anything about
492 narten, for among them (at least in this region) they are hardly
482 used at all; they always make their trips riding on reindeer, for which only the strongest animals are suitable, while the

T others are able to carry a load of no more than about two poods
122 on the average. With our baggage weighing about 180 poods, such a means of transportation would be bound up with the greatest difficulties, for we would be required to pack all the baggage in poods and load and unload every day. In addition, for one not accustomed to it, riding on reindeer is very difficult on account of the smooth, loose skin of these animals (one always rides without stirrups) and in particular would not

/186 cont./

122 Besides these stunted /187/ trunks, however, roots of great forest
(137) trees were found here and there in the ground far beyond the present timber line. A few such roots were pointed out to us; they show that the timber line is receding.

On the Pur this time we were assigned a very fine balagan in Kuladý for a dwelling, in which we rested for a day from the exhausting trip across the tundra. On this occasion I must say
621 something about the inhabited places here. Boljkalák, like a
361 number of settlements on the Lena which we succeeded in seeing later, can properly be designated as a village. If it does not wholly correspond to our conceptions of such, nevertheless at least a few huts stand together, more than one family lives there, and the inhabitants themselves appear to be more prosperous. On the other hand, all the other places that we encountered on our journey are to be compared with, say, the Latvian workers in Livonia (scattered farmsteads) -- the Russian designation here for this is urótschischtsche. On quite a large area, which is customarily named after a little river, a few balagans lie scattered in the forest, often versts apart, and here, too, in Kuladý. Even the balagan about five versts away in which we had previously stayed not far from the Pur was, it seems, counted as belonging to Kuladý. /The last paragraph of p. 187, p. 188, and the first paragraph of p. 189 are omitted in the translation; see the foreign text. Page 189 continues as follows./

122 On the evening of November 1, we finally arrived safe and
123 sound in the village of Ssiktjách /Siktyakh/ on the Lena, where we found the friendliest reception in the house of Rjeschétnikow. Having been informed of our imminent arrival by the Cossack long before, Mrs. Rjeschétnikow had put in order for us her only two rooms. The building consisted essentially of a Jakut /Yakut/ yurt, but was much larger than those offered to us before, on which two small rooms had been built; in one of the latter there was a Russian stove, which opened up the agreeable prospect of
241 freshly baked bread. We were entertained not only with that, and
122 with fine cakes, fish, and the like; Mrs. Rjeschétnikow daily
123 showed us hospitality with splendid potatoes which she had grown

/189 cont./

122 here in Ssiktjách. Besides potatoes she also raises turnips, radishes,
123 and cabbage, but the latter no longer sets heads. In Preobrashén-
• 241 skoje /Preobrazhenskoye/, the last place on the Tunguska where vegetables are grown, Mrs. Akúlow also complained about this. Preobrashénskoje, however, lies at the 60th degree of latitude, Ssiktjách at the 70th. The Ssiktjách potatoes were not at all inferior to those of Preobrashénskoje and were considerably larger than those from Turuchansk /Turukhansk/ that we had obtained the previous year, which may be due in part to the variety, for in Turuchansk we found round potatoes, in Ssiktjach longish ones,
[223] up to two inches long. Mrs. Rjeschétnikow also keeps some chickens, but complained that she gets only a few eggs from them; in part this may be due to the way the poor animals live -- they are kept in a dark cage under the stove and at most are permitted to walk about the room; even in summer they cannot /190/ go out in the open because of the many dogs, which are used here as draft animals, especially for hauling wood.

122 Unfortunately, here in Ssiktjach, just like the year before in
123 Jenisseisk /Yeniseisk/, we had to undergo the experience that the first entrance into a warm room after a long and difficult journey is not beneficial to one's health. For several days we felt listless and suffered from headaches, and I from a swollen cheek as well, which scarcely made it possible for me to give Mrs. Rjeschétnikow's cooking the attention it deserved.

And yet what great charm lay in this return from the wilderness! Even though Ssiktjách was such a remote outpost of culture and for a civilized European a wretched hole, how many long-missed enjoyments it offered us. Only someone who has been in this position himself can appreciate the pleasure that we felt when for the first time we undressed once again in a warm room, made our toilet at our ease in European fashion, and then put on the clean finer clothing that had been lying unused in our suitcases for almost a year. Perhaps a cadet who puts on the trim officer's uniform for the first time experiences something similar. How I had longed to be able to put my legs under a table again, for eating and writing on one's knees or at best on

136 /251 cont./
171 are many other more or less similar kinds of skins sold as beaver skins -- they are called false beaver.

132 Before I acquaint the reader in the following with the most interesting results of the local agriculture, I must first tell him the monthly mean temperatures for Jakutsk /Yakutsk/, derived from observations for almost 35 years, which I am taking from the previously cited work of Academician Wild, Die Temperatur-Verhältnisse des russischen Reichs /The Temperature Conditions of the Russian Empire/ (St. Petersburg, 1881). They are given in Celsius degrees for the months in new style.

Jan.	Feb.	Mar.	Apr.	May	June	July
-42.8	-37.3	-23.7	-9.6	4.5	14.6	18.8

Aug.	Sept.	Oct.	Nov.	Dec.	Year
15.5	5.6	-9.1	-29.8	-40.5	-11.2

The extremes are: maximum 38.8 C. = 31.0 R. in July, and -62.0 C. = -49.6 R. in January. The terrible cold of winter therefore corresponds to a very intense heat during the short summer. In order to characterize this specifically Siberian climate still more, I want to point out that my native city, Riga, which lies at about 57° latitude and has a mean temperature of +6.0 C., is somewhat cooler than Jakutsk in July, and the maxima are never equivalent to the Siberian ones.

• 241 I can say with complete justice that it is to this eccentric climate that Jakutsk owes its rich harvest of almost all the field crops found farther south. In any case it took great courage to count on such success here and to obtain it by force through years of toil /252/ against all prejudices, and I therefore regard it as my duty to preserve the memory of the name of the first local farmer, which we discovered. He was a discharged junior clerk, later community clerk, Konstantin Andréjewitsch Bolkáschin, whose first efforts are said to date from the year 1819. Not until 1825, on a piece of land worked by his own hands with a hoe, which he sowed with two poods of barley, did he succeed in getting a twenty-fold yield and through that aroused

241 /252 cont./
the interest of his superior, the community elder, Dmítrij Danílow, who took part in cultivating the field the next year.
241 They obtained the always good yield of a ten-fold harvest, but
256 mills were completely lacking. They had to content themselves
177 with wooden mortars and obtained only a kind of coarse groats which the Jakuten /Yakut/ did not care for at all. Although soon afterward, with the help of a merchant from Oljókminsk/Olekminsk/, better farm implements, which were immediately copied by the excellent Jakut blacksmiths, and hand mills were obtained, a Russian oven was built, and the first bread grown on the land was baked, it was still a very long time before the Jakuten -- originally a herding people -- became accustomed to agriculture. They regarded it as a sin, and when their elder, Danílow, tried to force them to do it, for he obtained better and better results in the following years by making the land arable for sowing during the year before, the dispute broke out into the open. Bolkáschin and Danílow were suspended as a result of the constant denunciations of their subordinates, and Bolkáschin moved away entirely to Jakutsk, while Danílow finally succeeded in convincing the higher authorities of the value of his efforts and was reinstated in office. Nevertheless, despite his /253/ work in the fields, carried out on a larger scale every year, the Jakuten continued to be quite indifferent to it.

241 Even up to the most recent times the agriculture of the
113 Jakuten /Yakut/ leaves much to be desired, for I have before me a printed publication of the Statistical Committee in Jakutsk for the year 1872, entitled: "Notes on Agriculture by the Jakutsk Merchant Peter Maksímowitsch Leóntjew," whose introductory words in particular are very characteristic, and I shall therefore give them here in translation:

"Almost half a century ago the Jakuten began to engage in agriculture, but even now they still sow much less grain than they actually could. The reason is not so much that they have no interest in agriculture, but rather ignorance or a certain Asiatic stubbornness that compels them not to imitate the example of the Russians unconditionally, but rather to act according to

/253 cont./

241 their own ideas, whereby they often let themselves be guided only
113 by chance. But this stubbornness either destroys the fruits of their labor completely or at least induces many to limit their sowing to such an extent that the harvest is not even sufficient for their own households -- as a result of this, they often suffer great hardship and then nourish themselves with only milk and spruce bark."

241 Leontjew himself has engaged in agriculture since the year 1836, and therefore the rules given by him, which refer to the choice of the land, the grains for sowing, the agricultural implements, and the preparation of the ground, are certainly of great importance. He particularly recommends sowing as early as possible, as soon as the ground prepared the year before has merely thawed on the surface, whereas the Jakuten /Yakut/ entertain the prejudice of not sowing before May 9. /254/ The following data with regard to this were given to me by a farmer there:

	Sowing:	Ripening:
Oats, Millet	April 12-13	The first days of August
Summer rye	April 27-28	August 10
Barley, Wheat	the first days of May	July 15
Hemp	May 3	The first days of August
Buckwheat, Peas	May 7-8	The first days of August

In this connection in the vicinity of Jakutsk in the years 1874 and 1875 the twentieth grain of the wheat, the eightieth one of the millet, and the tenth one of all the other field crops were harvested.

/254 cont./

241 The results of the agriculture in the province of Jakutsk are, to be sure, not so favorable, according to the official data furnished by the isprawnik /ispravnik/. I shall give here only the annual totals, whereas the report is much more detailed. The numbers refer to Russian chetvert (a grain measure = 2.1 hectoliters):

	Sowing	Harvest
1870:	5,131	20,229
1871:	6,050	12,614
1872:	5,682	19,725
1873:	6,621	14,388
1874:	6,708	35,259

According to this, the yield would be only twofold to fivefold, which, however, is by no means the case. The largest part 241 of the agricultural population, the Jakuten /Yakut/, intentionally 648 deceive the officials in every respect concerning their yield, so that favorable reports on the harvest may not be taken as an excuse /255/ to settle exiles in their district, against whom they have supreme contempt. The Skoptsy, on the other hand, who, as was said above, immediately devote themselves to agriculture with great diligence wherever they settle, falsify their statements about their harvests in order to drive up the market prices. Vegetables of all kinds, even cucumbers and, in hothouses, melons and watermelons, are cultivated with great success. I myself enjoyed excellent preserved cauliflower, the heads of which are said to become very large.

871 The bitter cold lasting during our entire stay and our health, greatly affected by the rigors of the journey, prevented us from seeing various points of interest in the city, except for a few churches and, among other things, the classical Progymnasium, in which Russian and Jakut boys are prepared for further training in the Irkutsk Gymnasium. The institution has four classes; Greek and Latin are required subjects. I myself, to be sure, am an advocate of classical learning and cannot imagine a true scholar without it, but I cannot now or ever approve of such a carrying out of the classical system as took

53:Tokarev and Gurvich E-4 (no date) 1964
RV2 Yakut RV2

parts. By the end of the 18th century, the fur resources of the Yakut district were running out and the district itself had been partially devastated through the piratical rule of the tsarist authorities. At the same time, the Yakut population, which had migrated from the Lena-Vilyuy district for various reasons, appeared on the borderland of Yakutiya, where they had not been seen before—on the Kolyma, Indigirka, Olenek and Anabar right up to the Lower Tunguska Basin.

But even during those first few decades contact with the Russian people favorably influenced the economics and culture of the Yakuts. The Russians brought a higher culture with them; agriculture was already in evidence on the Lena by the middle of the 17th century; the Russian type of dwelling, Russian fabric clothes, new trades, new furnishings and domestic objects slowly began to find their way among the Yakut population.

It is an extremely important fact that the establishment of Russian authority in Yakutiya put a stop to the intertribal warring and looting by the toyons, which up to that time had been a great hardship for the Yakut population.

An end was also put to the arbitrary behavior of the Russian soldiers, who often fell out among themselves and tried to draw the Yakuts into their quarrels. The order established in 1640 in the Yakut country was better than the previous state of chronic anarchy and constant internecine strife.

In the 18th century, by dint of the further penetration by the Russians to the east (the annexation of Kamchatka, the Chukchi peninsula, the Aleutian Islands and Alaska), Yakutiya played the part of a transit camp for new campaigns and the acquisition of more distant lands.

Between 1720 and 1740, the expeditions of Bering increased the importance of the Yakutsk-Okhotsk highway, which was used to transport a great deal of freight (this highway retained its importance up to the middle of the 19th century). All this drew Yakutiya into Russia's system of economic ties and thereby raised the general level of the productive forces of that territory.

The influx of Russian peasants (particularly along the Lena Valley on account of the construction of the mail route in 1773) created the right conditions for mutual influence between Russian and Yakut cultural elements. By the end of the 17th and 18th centuries, agriculture began to be practiced by the Yakuts, though at first it was a very slow business and Russian-type houses began to appear. Nevertheless, even in the 19th century the number of Russian settlers was comparatively small.

In addition to peasant colonization, of great importance in the 19th century was the system of convict settlements in Yakutiya. Together with the criminal convicts, whose effect on the Yakuts was negative, political exiles began to appear in Yakutiya in the second half of the 19th century; these were first the Narodniks[2], and later, in the 1890's, the Marxists, and they played a large part in the cultural and political development of the Yakut masses.

By the beginning of the 20th century, great strides had been made in the economic development of Yakutiya, at least in the central regions

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[2] Literally, "Populists;" adherents of a political movement directed toward a radical reconstruction of the social order through the peasantry.—Ed.

[p. 249]

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Farming implements: 1—old-type hump-backed scythe; 2—wooden hay fork; 3—old-type saddle with metal inlay; 4—muzzle for calves made with boards with teeth; 5—birchbark muzzle for calves.

53:Tokarev and Gurvich E-4 (no date) 1964
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224 aquatic and forest birds-duck, partridge, hazel-grouse, and so on. In the northern regions, the Yakuts engaged, and still engage, far more in hunting; for the Yakuts from these regions, just as for the Evenks, Evens, and Yukagirs, hunting is at times the chief means of subsistence. There, they chiefly hunt blue fox, hare, wild reindeer, elk, wild duck and geese, and so on.

The hunting techniques of the Yakuts hardly differed from those of other hunting peoples in Siberia. Instead of bows and arrows, guns (usually the flint type) came into use all over during the 19th century, and were used for squirrels, birds and other game; dogs were also used. A variety of traps and hunting equipment including blue-fox snares, bear-traps, hair nooses for hares and birds, and so on.

A purely Yakut method of hunting, unknown to any other people, is one in which an ox is used; the hunter skillfully approaches the game, hiding behind the ox, which he drives in front of him, then making the ox lie down, fires at the target from behind it. This method of hunting can be regarded as a modification of the well-known Tungus technique using a decoy reindeer as the bait; the modification is due to the transition from reindeer-breeding to pastoralism.

The Yakuts also had another method of hunting, unknown to the population of the taiga, which was a tradition among the steppe nomads; this consisted in driving the game on horseback, sometimes with dogs.

222 Gathering also played an important part as a subsidiary occupation, particularly among the poorer people. Pine sapwood (the inside layer of the bark) was usually gathered by women in the early spring and stored up for the winter in large quantities and in the dried form (from 10 to 100 poods per family, according to some sources).

In the northern regions where pines do not grow, they gathered larch sapwood, although it was not valued to the same degree, and various edible roots (lily, chekana) and green vegetables (wild onion, horseradish, sorrel, etc.).

Of far less importance in the economy of the Yakuts was berrying (blueberries, bog blueberries and so on).

241 648 The Yakuts only became familiar with soil cultivation fairly recently. At the time of the arrival of the Russians, agriculture was not to be found at all in Yakutiya, and even later it was only a few Russian settlers who engaged in it. Although in certain cases the Yakuts had been sowing crops since the end of the 17th century, it was only about the middle of the 19th century that agriculture became widespread in the Yakut economy, and this was chiefly due to the influence of the Russian peasants (particularly in the Olekminskiy Okrug).

The overall development of commodity relationships helped to speed up the development of agriculture and here and there ploughing was enforced by the administration.

At the end of the 19th century, the political exiles and the exiled Skoptsy helped to spread agriculture among the Yakuts.

Nevertheless, right up to the Revolution there was comparatively little farming among the Yakut population. They sowed some barley and less wheat. The tilling techniques were always very primitive.

Crafts and Trades

322 [53] The processing of raw materials and the making of different objects among the Yakuts chiefly retained the nature of domestic production for personal needs and not commerce. Woodworking and the making of

177 206 207 taken place in such forms of communication as radio, telegraph and telephone. Compared with 1940 the number of radio points in 1952 was more than doubled. By this time communication had been established between Yakutsk and rural localities and machine-tractor stations, and 225 nasleg soviets had been linked by telephone. Many rayons and nasleg soviets are now equipped with radios.

205 The extent of the postal routes is 65,000 kilometers, practically twice the length of the equator.

Towns and Cities

633 The capital of the Yakut ASSR is the city of Yakutsk, which used to be the oblast center. Here are concentrated the most important Yakut Republic offices, ministries, banks, scientific institutes, and higher and secondary schools. During the Soviet period Yakutsk has been turned into a major [365] industrial center. The water system laid in Yakutsk has the deepest water-intake point in the world. The problem of obtaining subsoil water for this water system was an extremely difficult one because of the permafrost. Engineers worked hard to solve this problem even before the Revolution, though never successfully. Soviet technicians and working people have solved it. Subpermafrost water is now fed into the main water supply. Stone bathhouses, mechanized laundries, barbershops and other such enterprises for the personal use of the population did not come into being until the Soviet regime. The streets of the city are paved with wood blocks and sidewalks have been constructed. Yakutsk is rapidly developing.

Over the last few years Yakutsk has been changing from wooden buildings to brick and sometimes reinforced concrete buildings. Bus routes between the city and neighboring regions are now in operation.

871 368 In Yakutsk there are 22 secondary, seven-year and primary schools. They are attended by about 9000 children. In the city there are 16 tekhnikums, various courses, and a pedagogical institute, a Yakut Theatre of Music and Drama, a Russian drama theatre, two movie houses and seven clubs. The Pushkin Science Library, the Yaroslavskiy Yakutsk Regional Museum and the Yakutsk Museum of Fine Arts are great favorites with the citizens.

743 744 There are hospitals in the city and it is also there that the research institutes and laboratories are to be found. In 1947 a research base of the USSR Academy of Sciences was opened there, and in 1949 it was turned into the Yakutsk branch of the Academy. In the same year there was opened a Yakutsk branch of the Tuberculosis Institute of the Academy of Medical Sciences.

Agriculture

241 233 565 In pre-Revolutionary Yakutiya the poor and middle peasant families totaled more than 80 percent of all households. One-seventh of all the households were entirely without sowings, and many were only able to sow a few hundredths of a hectare each. Most of the households (97 percent) had to do without factory-made agricultural implements. Stockbreeding produced extremely poor results. The owners of large areas of land and abundant livestock i.e.,—the kulaks and toyons, grew rich, but not so much by raising the level of land cultivation and animal husbandry as by exploiting the poor and middle peasants.

During the first two years of the Soviet regime the situation hardly changed for the better. There was redistribution of the land in 1923-24, but the reform only partly cut down the amount of land used by the toyons and virtually made no difference to the burdensome state of the poor people. For example, the nonrepartitional land expropriated by the toyons on the basis of their "clearing right" was left in their possession. It was only the second land reform of 1929 that put an end to toyon coercion and created a situation in which the agriculture of Yakutiya could be improved. About 150,000 hectares of the best land, formerly owned by the toyons and kulaks, then passed into the hands of the working peasantry.

A collective-farm movement among the Yakut workers began in about 1930. In 1929 only 3.6 percent of the households were collectivized; by 1932 the figure was 41.7 percent, and by 1947 collective farms united 98.7 percent of all the households in the Yakut Republic. Collectivization gave a powerful impetus to the development of land cultivation, which prior to the Revolution had only advanced at a snail's pace. The sown area in Yakutiya had increased to 92,000 hectares by 1946, as opposed to 37,000 in 1917. Machine-tractor stations provide great assistance to the collective farms. Several hundred tractors, many combines and trucks are now at work in the fields. More than 20,000 agricultural machines are in operation. Trained teams of Yakut tractor-drivers, combine-operators, drivers and mechanics have begun to appear. Great advances have been made in the field of agricultural techniques. Particular attention has been given to retention of the moisture in the soil. The climate and soil conditions of Yakutiya make agriculture particularly difficult. In addition to the frequent droughts and spring frosts, some of the lakes dry up and deprive whole settlements of water. Over the last few years the Yakut collective farms have worked very hard to organize irrigation and flooding.

Many farms use water wheels and pumps to water their gardens. In 1952, more than 300,000 hectares of land, chiefly green meadows and pastureland, were irrigated by means of both permanent and temporary installations. The first specialized meadow-reclamation station had been set up in the Gorniy Rayon.

In 1952, M. G. Yegorov, member of the New Life collective farm in the Megino-Kangalasskiy Rayon, was awarded a Stalin Prize for the introduction of more modern methods in vegetable-growing on Yakutiyan collective farms. In the rigorous Yakutiyan climate Yegorov had been gathering 300-350 tsentners of cabbage, 180-190 tsentners of cucumbers, 170 tsentners of carrots, and 130 tsentners of tomatoes each year per hectare. In 1956 he was awarded the Order of Lenin.

Nevertheless, animal husbandry is still the chief branch of agriculture in Yakutiya. Poorly productive livestock was a legacy received by the collective farms from the past. The milk yield per cow averaged only 600 kilograms of milk per year. The Yakut farmers struggled hard for complete reorganization of their animal husbandry. The productivity of the cattle was improved throughout the Republic by crossbreeding. Techniques for the maintenance and pasturing of cattle were radically changed. Many standardized cattle-yards of an improved design were built. The work of the milkmaid was mechanized on many collective farms. On account of the extensive clearing of meadowland, the farms are in a position at the present time to provide their cattle with coarse fodder, although they still do not have enough concentrates.

An important part has been played in the development of animal husbandry by veterinary-zootechnical work. The rate of malignant anthrax among cattle has been reduced to nil. Precautionary measures in this

The personal property of the collective-farm members includes herds of reindeer (up to 100 head), transport equipment, vertical nets, hunting guns and hunting and fishing tackle. Reindeer-herding remains the chief branch of the economy, but is now done in accordance with good animal husbandry practice. A reindeer technician and a veterinary assistant are attached to each team, which looks after a subherd.]

The Dolgan reindeer-herders on the collective farms pasture the herds in good grazing ground, far from the herding tent by day, and as night falls drive them back to the tent. Having rested, the reindeer at midnight begin to feed near the tent; at dawn they are driven to new feeding grounds some distance away. This grazing system, on the one hand, keeps the reindeer well fed and, on the other hand, they do not stray during the night and are easy to watch. Twenty-four-hour-a-day, year-round guarding of the reindeer has become a rule in collective herding.

[The herd of reindeer is constantly growing. Thus, in the Avamskiy Rayon, the number of reindeer increased over the last five-year period, by more than 50%. The necessity of yearly migrations along the tundra from Dudinka to the Anabar has been eliminated; previously this had a most unfavorable effect on Dolgan reindeer-herding. The demand for pack-reindeer has been reduced, due to the carriage of goods into the Avamskiy and Khatangskiy Rayons by the Northern Sea Route; from here they are brought to remote inland points by steamboat or cutter. Previously, the only route connecting the Dudinka with the Avamskiy and Khatangskiy Rayons in the winter was the reindeer highway from Dudinka to Popigay. Connections are now maintained winter and summer by airplane, although reindeer transport is still of some importance. Its technology is unchanged.

[Hunting technology has been reconstructed. Traps are set in the autumn before the beginning of the blizzards. For this purpose, hunting brigades sometimes journey to the north for several hundred kilometers into the taiga, spending the nights in sled-tents with iron stoves. Hunting brigades are made up before the beginning of the season, traps being distributed on the basis of 150–200 pitfall traps and 10 springtraps per hunter. With the first snow the brigades go out into the tundra and begin to hunt wild reindeer. Foxtraps are baited with the surplus meat obtained. In the Khatangskiy Rayon alone, where the majority of the hunters are Dolgans, the collective farms during the 1948–49 season set 5000 new pitfall traps and prepared 1000 bait-pits for foxes, in which they placed more than 40 tons of bait.

[Fox-hunting begins on November 15th. Springtraps are placed by experienced hunters at places where wild reindeer have been killed in the autumn, or on the bloody tracks of wounded wild reindeer near bait-pits, or previously discovered burrows. Hunting is the main source of income for Dolgan collective farms. The previous predatory methods have gone out of use—spearings, stockades, geese nets. Fishing has become important in a number of areas. Vegetable-gardening and animal husbandry (other than reindeer) have developed on many Dolgan collective farms. The members grow chiefly radishes, cabbage and onions.

[A process of settling down the previously nomadic population is in progress. In the new settlements where the collective-farm members whose work does not make them nomadic live, dwelling-houses of the Russian type have been built, along with various other farm and public buildings. Many settlements have their own electric stations.]

The members of reindeer-herding and hunting brigades lead a nomadic life. Their families frequently travel with them. Separate nomadic groups are now set up, not on the basis of individual relations among different